

# Titanium Mill Products, Ingot, and Castings

## FIRST QUARTER 1988

U.S. Department of Commerce  
BUREAU OF THE CENSUS

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The statistics in this publication are based on a survey of manufacturers and represent total U.S. shipments of titanium mill products, ingot, and castings. Estimates are included

for companies whose reports were not received in time for tabulation. A description of the survey methodology and related information appears on page 3.

Table 1. NET SHIPMENTS AND INVENTORIES OF TITANIUM MILL PRODUCTS

(Thousands of pounds)

Product description	First quarter 1988		Fourth quarter 1987	
	Net shipments	Inventories	Net shipments	Inventories
Net shipments <sup>1</sup> .....	11,893	1,551	11,287	1,002
Sheet and strip.....	(2)	(2)	(2)	(2)
Plate.....				
Forging and extrusion billet.....	5,828	978	6,122	449
Rod and bar.....	1,780	330	1,651	317
Fastener stock and wire.....				
Extrusion.....				
Pipe and tubing.....	4,285	243	3,514	236
Powder.....				
Other.....				

<sup>1</sup>Net shipments is the sum of mill product shipments plus mill products consumed in the manufacture of fabricated products, less total receipts.

<sup>2</sup>Data for sheet and strip, plate, extrusion (other than tubing), pipe and tubing, and other have been combined to avoid disclosing individual company data.

Table 2. TITANIUM INGOT, MILL PRODUCTS, AND CASTINGS: 1988 AND 1987

(Thousands of pounds)

Quarter and year	Ingot					Mill products			Castings	
	Pro-duction	Receipts	Ship-ments	Con-sumption	Ending inventories	Pro-duction	Receipts	Net ship-ments <sup>1</sup>	Pro-duction	Ship-ments
1988										
First quarter.....	21,234	5,234	6,281	20,283	8,228	15,187	3,269	11,893	825	453
1987 <sup>2</sup>										
Total.....	74,432	16,605	19,220	71,122	(X)	52,537	10,080	44,570	2,915	949
Fourth quarter.....	19,681	3,683	5,272	16,458	8,917	13,340	2,342	11,287	802	278
Third quarter.....	18,822	4,774	4,478	18,820	7,340	12,601	2,318	10,503	754	239
Second quarter.....	18,170	4,014	5,229	17,938	7,042	13,965	2,849	11,775	727	221
First quarter.....	17,759	4,134	4,241	17,906	7,901	12,631	2,571	11,007	632	211

(X) Not applicable.

<sup>1</sup>See footnote 1, table 1.

<sup>2</sup>Inventories for the year are those shown for the fourth quarter.

Address inquiries concerning these figures to U.S. Department of Commerce, International Trade Administration, Materials Division, Washington, D.C. 20230, or to the Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Mary W. Ellickson, (301) 763-2529.

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Table 3. QUANTITY OF NET SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF TITANIUM MILL PRODUCTS: FOURTH QUARTER 1987

(Thousands of pounds)

Quarter and year	Manufac- turers' net shipments	Exports of domestic merchandise <sup>1 2</sup>	Percent exports to manufac- turers' net shipments	Imports for consumption <sup>1 3</sup>	Apparent consump- tion <sup>4</sup>	Percent imports to apparent consumption
Total.....	16,558	2,676	16	521	14,403	4
Titanium ingot and forging and extrusion billet <sup>5</sup> .....	11,394	1,764	15	18	13,140	(Z)
Titanium mill products.....	5,164	912	18	503	4,755	11

(Z) Less than one-half of 1 percent.

<sup>1</sup>For comparison of Standard Industrial Classification (SIC) codes, Schedule B export numbers, and TSUSA import numbers, see table 4.<sup>2</sup>Source: Bureau of the Census report EM 546, U.S. Exports.<sup>3</sup>Source: Bureau of the Census report IM 146, U.S. Imports for Consumption.<sup>4</sup>Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.<sup>5</sup>Comparability of output, export, and import classifications for ingot and billet assume that bloom, sheet bar, and slab are reported as ingot or billet in the output numbers. Figures for imports of ingot and billet also include powder, crystal, and similar forms which are excluded from the output and export numbers.

Table 4. COMPARISON OF STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES, SCHEDULE B EXPORT NUMBERS AND TSUSA IMPORT NUMBERS: 1988

Product code	Product description	Export number	Product description	Import number	Product description
33562 74 <sup>1</sup>	Titanium ingots and forgings and extrusion billet.....	630.6520	Titanium ingots, billets, blooms, sheet bar and slabs	<sup>2</sup> 629.1460	Unwrought titanium
33562 79	Titanium mill products.....	630.6570	Wrought titanium metal, including alloys (excludes sponge, ingots, billets, blooms, sheet bars, slabs, waste, and scrap)	629.2000	Wrought titanium metal, including alloys (excludes waste, scrap, and unwrought metal)

<sup>1</sup>For comparability of output, export, and import classification for ingot and billet, assume that bloom, sheet bar, and slab are reported as ingot or billet in the output codes.<sup>2</sup>Figures for imports of ingot and billet also include powder, crystals, and similar primary forms which are excluded from the output and export codes.

## DESCRIPTION OF SURVEY

**Scope of Survey.** This survey covers companies engaged in producing titanium ingot, mill products, and castings.

**Survey Methodology.** The statistics in this publication are collected by mail on Bureau of the Census quarterly Form ITA991, Titanium Metal. The panel for this survey includes all known producers of titanium ingot, mill products, and castings, approximately 46 companies.

**Survey Error.** Figures for the current quarter include estimates for panel members for which reports were not received in time for tabulation. Such missing figures are "imputed" based on quarter-to-quarter movements shown by reporting firms. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse because the actual quarterly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is not precisely known but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data, however, increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

**Revisions to Previous Period Data.** Statistics for previous quarter may be revised due to receipt of corrected data from respondents, including the receipt of late reports for which estimates were previously made as described above, and other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

## EXPLANATION OF TERMS

**Gross Shipments of Mill Products.** Represents mill shapes shipped between producers plus mill shapes consumed in the production of fabricated products such as forgings.

**Net Shipments of Mill Products.** Represents gross shipments less receipts. For detail categories, net shipments also include consumption in the manufacture of other mill shapes.

**Ingot.** Includes direct castings of extrusion billet and other similar products.

**Sheet and Strip.** Flat roll mill products with thickness less than or equal to .187 inch.

**Plate.** Flat roll mill products with thickness exceeding .187 inch and greater than 10 inches wide.

**Forging and Extrusion Billet.** Rounds, squares, and rectangles with a cross-sectional area greater than or equal to 16 square inches and width less than 5 times thickness.

**Rod and Bar.** Rounds greater than 1/2 inch diameter and less than or equal to 4 1/2 inches in diameter. Squares with crosssections less than 16 square inches. Rectangles with widths less than or equal to 10 inches and thickness less than 3/16 and crosssectional area less than 16 inches square.

**Fastener Stock and Wire.** Rounds with diameter less than or equal to 1/2 inch.

**Extrusions (Other Than Tubing).** Any product of any shape, except pipe and tubing, produced by forcing heated metal through a die.

**Pipe and Tubing.** All seamless and welded pipe and tubing.

## COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; on the other hand, the export and import classification system is more materials oriented. Also, there are a substantial number of imported commodities which have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to the problems mentioned above, there are also the following problems affecting the comparability of the three sets of data.

**Valuation.** There are different methods of valuation for the three types of data:

- **Domestic Output.** Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.
- **Exports.** Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance and other charges to the export point.



Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.

- **Imports.** Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

**Duplication in Quantity and Value of Output.** Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

**Low-Value Export and Import Transactions.** Detailed commodity information is not included for individual export shipments valued at not more than \$1,500. Generally, detailed commodity information is not included for individual import shipments valued at not more than \$1,000. For textiles and textile products, gloves, footwear, and miscellaneous rubber and plastics products, detailed commodity information is not included for individual import shipments valued at not more than \$250. This is believed to have only negligible effects on the statistics for the bulk of the commodities.

**Manufacturers' Shipments, Not Specified by Kind.** The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

**Time Lag Between Output and Exports.** There will be a lag between the time a commodity is produced or shipped by the producer and the time it is actually exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

**"Direct" vs "Total" Commodity Exports and Imports.** Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

**Used Commodities.** With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

**Geographic Area of Coverage.** Import and export data reflect the movement of merchandise into and out of U.S. foreign trade zones, the U.S. Virgin Islands, and the U.S. customs territory (includes the 50 States, the District of Columbia, and Puerto Rico).

## RELATED REPORTS

An annual Current Industrial Report also is published in this series. The annual report summarizes quarterly figures and incorporates known revisions for both the current and previous year. It also provides a single reference copy to replace the quarterly publications.

The Bureau of the Census publishes the following related reports:


Series	Frequency	Title
<i>Current Industrial Reports</i>		
M33-2	Monthly	<i>Aluminum Ingot and Mill Products</i>
M33A	Monthly	<i>Iron and Steel Castings</i>
M33E	Monthly	<i>Nonferrous Castings</i>
MA33B	Annually	<i>Steel Mill Products</i>
<i>Other Industrial Reports</i>		
M3-1	Monthly	<i>Manufacturers' Shipments, Inventories, and Orders</i>
(AS)	Annually	<i>Annual Survey of Manufactures (ASM)</i>
(MC)	Quinquennially	<i>Census of Manufactures</i>
<i>Foreign Trade Reports</i>		
EM 546 FT 446	Monthly Annually	<i>U.S. Exports—Schedule B—Commodity by Country</i>
IM 146 FT 246	Monthly Annually	<i>U.S. Imports for Consumption—TSUSA—Commodity by Country</i>

## CONTACTS FOR DATA USERS

Subject Area	Contact	Phone Number
Current Industrial Report ITA991	Mary Ellickson	(301) 763-2529

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Subject Area	Contact	Phone Number	Subject Area	Contact	Phone Number
Manufacturers' Shipments, Inventories, and Orders	Ruth Runyan	(301) 763-2575	To subscribe to a Census Bureau publication	Superintendent of Documents (GPO)	(202) 275-3054
Classification Systems Comparability	James Kristoff ESD	(301)763-1935	Foreign Trade	Trade Data Inquiries Staff (FTD)	(301) 763-5140
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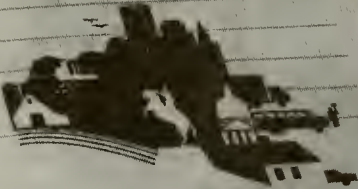


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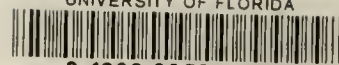
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